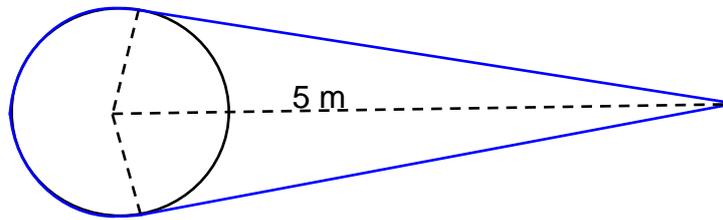# Edexcel A level Mathematics Trigonometry

Topic assessment

1. A belt is wrapped around a cylinder of radius 2.5 m as shown.
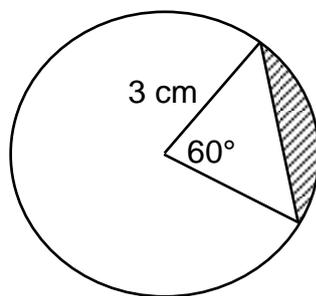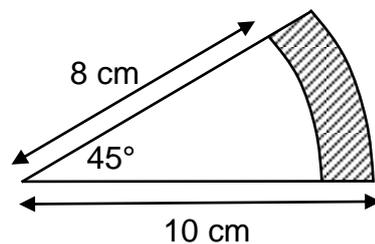

   Find the length of the belt. [6]

2. Find the perimeter and area of the shaded sections of these shapes.

   (i)

   [7]

   (ii)

   [7]

3. (i) Sketch the graph of $y = \cos x$ for $-\pi \le x \le \pi$, [2]
   (ii) Sketch the line $y = 3x$ on the same axes, and indicate the point where the graphs intersect. [1]
   (iii) Use small angle approximations to find an approximate value for the x-coordinate of the intersection point, explaining your reasoning carefully. [5]

4. Solve these equations for $0 \le \theta \le 2\pi$.
   Give your answers as a multiple of π.

   (i) $\cos \theta = \dfrac{\sqrt{3}}{2}$ [2]

   (ii) $\sin \theta = 0.5$ [2]

   (iii) $\tan \theta = \sqrt{3}$ [2]

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5. Solve these equations for $0 \le \theta \le 2\pi$.
   Give your answers as a multiple of π.

   (i) $\cos^2 \theta = \dfrac{3}{4}$ [3]

   (ii) $3\tan^2 \theta = 1$ [3]

   Total 40 marks